Phase 1 Project

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01 - Introduction

This project aims to analyze aviation accident data to identify the lowest-risk aircraft options, ensuring a safe and profitable expansion into this new market.

02. Business problem

With company is diversifying its portfolio by expanding into the aviation sector, targeting both commercial and private enterprises. However, the company lacks insight into the potential risks associated with different aircraft types. This will provide the necessary risk assessment to guide the company in making informed decisions about aircraft purchases.

3. Main Objective

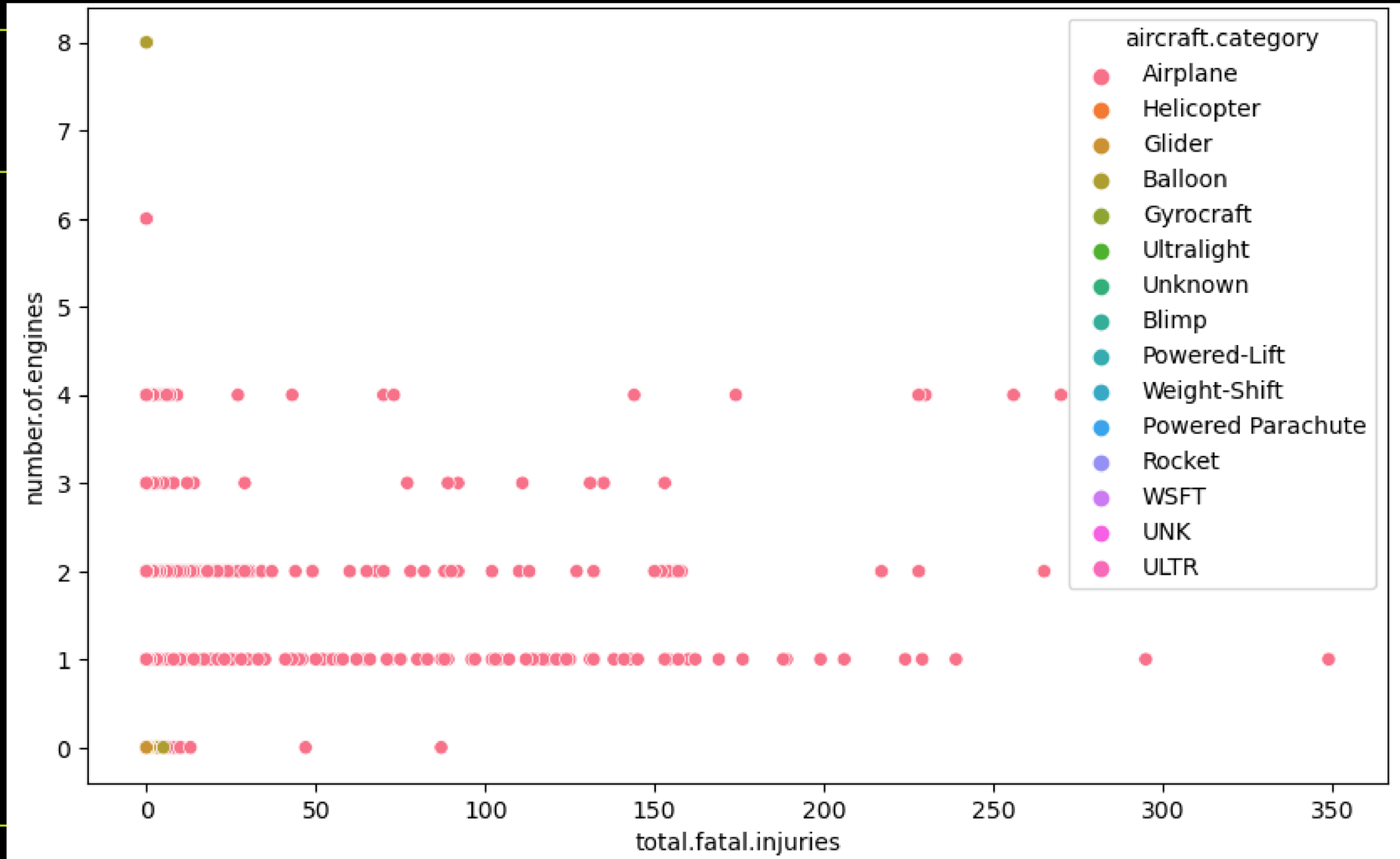
The primary objective of this project is to identify the lowest-risk aircraft for your company to purchase. This involves analyzing aviation accident data to uncover trends and patterns, ultimately leading to actionable insights and recommendations for the head of the new aviation division.

4.Specific Objective

1. Identify aircraft models with the lowest number of total fatal and serious injuries.
2. Determine factors that lead aircrafts to have accidents and incidents

5.Data Analysis

from the plot we can deduce that planes with many engines suffer few fatalities and injuries



6. Conclusions

1.The majority of incidents are classified as accidents rather than incidents. This indicates a higher occurrence of serious events compared to minor incidents.

2.Certain types of aircraft, such as small private planes versus large commercial jets, might show different risk profiles. Private planes might have more frequent but less severe incidents, whereas commercial jets might have rarer but more severe accidents.

3.The severity of injuries in accidents varies, with some incidents resulting in fatalities and others resulting in minor injuries or no injuries at all. The data likely show that fatal injuries are relatively rare compared to non-fatal injuries.

7.Recommendations

1. Based on the data, the company should prioritize purchasing aircraft models that have demonstrated a lower frequency and severity of accidents. Specific models and manufacturers with better safety records should be highlighted in the final analysis.
2. Invest in advanced training programs for pilots and maintenance crew, especially for aircraft types that show a higher incidence rate. Implementing rigorous safety protocols and regular maintenance checks can mitigate some risks
3. Use detailed data analysis and visualization tools to regularly review safety performance and make informed decisions about fleet management and operations. This includes tracking near-misses and non-fatal incidents to preemptively address potential safety issues.